

NOAA REPORT



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November/December 1993

NESDIS Head Named: Robert S. Winokur has been named assistant administrator for satellite and information services. He will head NOAA's National Environmental Satellite, Data and Information Service (NESDIS), which operates geostationary and polar-orbiting environmental satellites and maintains environmental data used by scientists throughout the world. Formerly technical director in the Office of the Oceanographer of the Navy, a position he held for the past eight years, Winokur has more than 30 years of experience in Navy and related national oceanography programs. He also has a broad

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range of experience in underwater acoustics and antisubmarine warfare, undersea technology, ocean policy, satellite and manned space oceanography, information technology and national environmental issues. His background includes application of Navy data and systems to environmental problems.

SARSAT Saves Mariners off Florida Coast: The lives of three mariners aboard a boat that was taking on water off the Florida coast were saved last month when NOAA's search and rescue system went into action after picking up their distress signal. Those rescued were from the *Miranda II*, when the ship began taking on water en route from Mobile, Ala., to Key West, Fla. When the captain realized the vessel was in trouble, he radioed

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The southern California wildfires, as seen by NOAA-11, a polar orbiting satellite.

\$20K in Aid to Go to Calif. Coastal Commission

Satellite Spots Calif. Fires

As fires raged over southern California last month, NOAA-11, one of NOAA's polar orbiting satellites, captured this photo. The white spots just off the coastline are the actual fires, with the clearly visible smoke clouds trailing southwesterly toward the Pacific Ocean. This NOAA satellite imagery provided firefighters the capability to monitor the burning daily, and gave them important information on the location and extent of the fires.

Aid to State Agency Announced

NOAA announced last month that it will donate \$20,000 to the California Coastal Commission to boost its computer capability while handling the expected flood of requests for coastal permits and exemptions during the aftermath of the recent devastating wildfires.

The California Coastal Commission has the responsibility to monitor

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Effects of Midwestern Floodwaters Seen 'Far Reaching'

As part of NOAA's interest in healthy coastal ecosystems and its stewardship of living marine resources, the Coastal Ocean Program (COP) has been coordinating research and developing assessments into the possible impacts of the massive flow of floodwaters that were discharged into the Gulf of Mexico last summer on the Gulf ecosystem and its resources.

To date, several significant findings have emerged from the work. Following the maximal discharge of the floodwaters into the northern Gulf of Mexico in late summer 1993, NOAA Nutrient-Enhanced Coastal Ocean Productivity (NECOP) scientists documented an unusually large area of hypoxia, or low oxygen bottom water off coastal Louisiana. The extent of hypoxia has been found to be directly related in space and time to the freshwater inflow and

waterborne nutrients that stimulate primary productivity in the general vicinity of the Mississippi and Atchafalaya River outflows.

Additionally, the effects of the floodwaters were much more far reaching than expected. The freshwater influence has now been detected not only in the northern Gulf but also in the Florida Keys and on the East Coast. NECOP and CoastWatch scientists are presently documenting the path and effects of the freshwater through a combination of field oceanographic measurements and satellite imagery. The results will be published in a forthcoming special report by the COP and NWS on the effects of the flooding.

The NECOP program, developed by the Office of Oceanic and Atmospheric Research and COP, and the CoastWatch program, developed by COP and NOAA's National Environmental Satellite, Data, and Information Service, are providing much of the information to conduct this work. The NECOP program is studying water column processes related to primary productivity and effects of nutrient enrichment on nearshore waters. The satellite imagery delivered through CoastWatch indicate the spatial distribution of sea surface temperatures and turbidity associated with the Mississippi plume's flow into the Gulf of Mexico. Weather and hydrologic data are provided by

NOAA's National Weather Service. Other data useful for assessing impacts are provided by other federal agencies, like the U.S. Geological Survey and the Minerals Management Service, and by Gulf state natural resource departments. The area of study extends from the Mississippi River delta to the U.S. East Coast, including the Florida Keys.

—Isobel Sheifer

(To receive a copy of the publication on the impacts of the Mississippi flooding on the Gulf of Mexico when it becomes available, call NOAA Coastal Ocean Office at 301-713-3338.)

Funds Slated to Aid Calif. Agency

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and provide permits for development in coastal areas of the state. The Commission will help the residents of Malibu and the Santa Monica Mountain area with processing their applications to rebuild their homes.

NOAA has also promised to provide additional funds to support increased staffing needs during the emergency period, and to arrange for coastal permitting personnel from other state coastal programs to travel to California and assist local staff on a temporary basis. NOAA's assistance will help ensure that property owners will receive rapid permit response without compromising protection of the area's important coastal resources. ☺

Wash. Sanctuary Passes Milestone

The proposed Olympic Coast National Marine Sanctuary off Washington state's Olympic Peninsula came closer to reality last month with approval by the federal Office of Management and Budget of an environmental impact statement and management plan.

It would be the first such marine sanctuary in the Pacific Northwest and would reach from Cape Flattery, the most northwestern point in the lower 48 states, to halfway down the coast of Washington. The boundaries stretch along 135 miles of undeveloped,

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Areas of low oxygen bottom water, or hypoxia, off coastal Louisiana. The extent of hypoxia has been found to be directly related to the inflow of waterborne nutrients, much of which was carried by the Mississippi floodwaters.

Talking With

Dr. Kathryn Sullivan NOAA Chief Scientist

Dr. Kathryn Sullivan, NOAA chief scientist, is a geologist, an oceanographer and a former NASA astronaut. Sullivan was the first American woman to walk in space in 1984. She is also an accomplished diver and worked with NOAA's National Undersea Research Program.

Q: The first thing I'd like to ask you about, obviously, is the satellites. With your experience in space, can you tell me what has happened, how it could have happened and your view of it.

SULLIVAN: I won't comment on technical details of any of the failures, because there are ongoing investigations. I can say that it doesn't seem likely that there is a single, common, generic problem.

Spaceflight is a very tricky business. No matter whether this is the first satellite of some design ever built or, like the NOAA polar satellites, one of a series of similar satellites, one cannot afford any complacency. If we want to be a space-faring company or nation or agency, and if we want to be successful, it takes great skill, great engineering insights and great discipline always, absolutely always. I think it will be a tremendously long time, if ever, before space faring becomes what everyone might consider "easy."

We now consider airline travel easy, at least for us "in the back of the bus." I've been in operational aviation for 15 years, and my brother is in airline operations. No one designing,

maintaining or flying an airliner considers it routine or easy. If they do, you don't want to fly on that airplane.

So I think we have to be a little careful. Our desires and our visions are spectacular and bold, and we should always keep them high. But within government, in business and among the practitioners, it will always be essential to have very crisp and

rigorous rules.

Q: Is it because space travel is seen as being routine? Not just satellites, but in general.

SULLIVAN: I don't know. It's not clear to me if it was sold to the public as being routine. I'm not aware any of the practitioners have ever argued that it's routine. But I think there's a general human desire—there's this hope or wish—that it's as easy as it looks on *Star Trek*. That's a very dangerous mistake.

Television is not reality. Space TV and space movies are not the space business.

Q: How did you prepare for your space career with NASA, and your time here at NOAA?

SULLIVAN: I entered college intending to major in languages and linguistics, and I was very naive about what that meant one might do to earn a living. Along the way, happily enough, I met people who were smarter than me, who directed me to extend my interests and explore some other disciplines. And that process reawakened my early interest in sciences. It also really brought my early geographic interests and the

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Dr. Kathryn Sullivan, NOAA Chief Scientist

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Dr. Kathryn Sullivan

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sciences together.

So I shifted over to a major in the earth sciences and spent an exchange year overseas, studying oceanography. By the end of that time, I was fascinated with marine geology, physics, geochemistry, and things like that. So I decided to go on to graduate school. It was just near the end of my degree program, in 1977, when NASA reopened the door to the astronaut program. There hadn't been any selections to NASA since 1967, and now the space program also was entering a new domain. There were distinct and well-established roles for pilots and for scientists. So that really opened a different set of opportunities, ones that I initially likened to a combination of ship's engineer and chief scientist on an ocean-going research vessel, but sailing in a different kind of ocean.

So I applied. On the simplest of all levels, I figured no self-respecting earth scientist ought to be able to pass up an opportunity to see Earth from orbit with their own eyes. It was a one-in-a-several thousand chance, and I ended up being one of a few out of several, many thousands who were fortunate enough to be selected.

Q: The previous NOAA administrator, John Knauss, was an oceanographer, and, of course, that's Dr. Baker's main field. And the previous chief scientist was a marine biologist. As part of a NOAA leadership that has oceanographers leading it, how do you then expand to take in all of what NOAA, a very diverse agency, does?

SULLIVAN: You'll find that oceanography is itself one of the most diverse among the sciences. In fact, in many oceanography degree programs, you'll find distinct sub-discipline course requirements, covering chemi-

cal, biological, physical and geological oceanography. To consider oneself an oceanographer, in the full sense of that word, you need to have a reasonable understanding of all of those. There is also increasing recognition that the field must be approached in that interdisciplinary way if it's to effectively understand the oceans. To understand what drives oceanic circulation you need to understand the physical coupling between the atmosphere and the ocean. And in turn, you can't understand seasonal variations in weather, or longer-term climate variations, without understanding how the ocean thermal energy couples with the atmosphere.

There are many such linkages. So

while academically we still often do physics, chemistry and biology in isolation, that's not how the ocean works, and that's not how the planet works.

Q: Do you find that there are public perceptions of what scientists do that are totally at odds with what actually happens?

SULLIVAN: Yes, I would say so. I think if you look at what the experience of taking science at school normally is, say, based on eighth to 12th grade science studies, in all probability you're not going to be wild about it. Looking back over the science I took in school, especially grade school and junior high, it was an experience in which there were

tough questions, and there were specific answers which we just had to know. I didn't get to ask the question, and there wasn't much discovery or reasoning involved with getting the answer.

Being a scientist is exactly the reverse of that. There are questions the world poses that no one has the answer to. And that's okay. It's not bad not to have an answer. That is exactly what science and engineering are about: the development of sound answers to open questions.

In fact, it's great to have a question no one can answer yet: that means it's your turn. You are trusted to assemble data, information, logic, and to form an answer. You have to prove it to people to their reasonable satisfaction, of course. But being a scientist is about being recognized as having the necessary skills and insights to assemble answers that people can and should pay attention to and can make decisions on.

That's exciting. That's like putting together the world's leading jigsaw puzzle and having it make a difference.

Q: How did you come to NOAA away from what many people may see as the higher profile of NASA and space travel?

SULLIVAN: Well, by and large, the space shuttle program does not play much of a role in earth science

research. That's predominantly the domain of unmanned satellites and ground stations. Certainly, being in NASA was a spectacular, highly coveted opportunity. I was thrilled to be part of it, and I got a tremendous education and a tremendous set of opportunities there. But over time, particularly the last three to five years I was there, I found increasingly that I, as an earth scientist and an ocean-

to be for another five to ten years, or whether maybe it was time to consider other options.

Having gotten no further than realizing this moment was coming, but sensing it was time to take stock, I was approached by the prior Chief Scientist, who had decided for personal reasons it was time to move on, and asked if I would agree to having my name put forward. And I

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ographer, really couldn't remain disengaged from the earth and ocean sciences that I most cared about. And I found myself increasingly frustrated just to be reading from the sidelines about major issues of environmental science and not be somehow engaged in supporting the effort to address them.

In a sense, my particular background made me face a little more of an either-or choice than perhaps a test pilot faces in deciding how long to stay in the astronaut program.

I had come to a point just before my third flight when I realized three flights was a tremendous accomplishment, and that I was ready for a little bit of a down time. Also, I realized it was time to sit back, take stock about my future, and decide whether I was a ready to commit to another block of time. I believe that being effective as an astronaut requires one to be dedicated, focused and energetic about it several years at a time. So I figured it was going to be time to ask myself whether this was absolutely where I wanted

realized that I probably did want to take this shot and see what happens. So I agreed.

Q: The Chief Scientist's duties are changeable from one person to another. How does what you do as the Chief Scientist differ from what other chief scientists in other agencies do?

SULLIVAN: There are many definitions of "chief scientist" in different organizations, ranging from purely advisory positions to those where the chief scientist directly controls science and technology plans and budgets. Jim Baker and I share the view that NOAA will always be best served in the long run if the Chief Scientist plays an integral role in planning, budgeting and evaluating all of our research activities. So it's important that this office serve a NOAA-wide role, rather than a single-discipline role, and that a good balance be struck between the daily details and the big picture, or strategic view, of our scientific research needs.

Q: What has surprised you most about your time here of spanning both the Bush and Clinton administrations? What's pleased you, and what do you want to change?

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Dr. Kathryn Sullivan

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SULLIVAN: I thought before I came here that I was reasonably well informed about NOAA and its many activities. I think I was. But getting directly engaged in the organization has let me see in great detail the true breadth and depth of what NOAA people are engaged in. And it's very impressive in scope and caliber.

I'm not disappointed with anything so far. I have been sobered

of your term?

SULLIVAN: A lot of folks feel that NOAA is a patchwork assembled out of multiple unrelated things. And that poses a real challenge. So one thing I would like to help do as a member of this team is focus and clarify an integrated view of NOAA for the 21st Century. That doesn't narrow our focus down to one note, but unifies it, provides cohesion.

If you look at the history of the science disciplines NOAA consists of

scientific diversity. And I think we've made a tremendous step in that direction. This first exercise of the Strategic Plan has given NOAA a clearer sense of itself.

An important next step for me as Chief Scientist is to look carefully at science and research across NOAA today, and assess how well prepared we are to carry out the Strategic Plan. Do we have the science and technology base we need? Is the caliber of our science high? Are we structured and postured and moving in the right directions? Do we have sound sets of decision-making criteria and mechanisms? Are we agile enough in repositioning and responding to the new challenges or new opportunities? If the answer to any of those things is no, what can we do about that?

Scientific research is the essential underpinning to all of NOAA's products, be they forecasts, stock assessments, or advice to national policymakers. So it's vital that we critically appraise ourselves, and take whatever actions are needed to keep our research base sound, effective, and healthy for the 21st Century. ☺

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by some of the realities that make accomplishments hard—organizational, political, personal realities, for example. But those are just elements of the challenge to be undertaken.

One particular thing I've been pleased to see since coming here is a change in the way NOAA responds to new opportunities and challenges. The Strategic Planning process truly brought out some fresh, creative thinking about the agency and its future, both internally and within some of our key constituencies.

Q: Actually we're down to my last question. What do you hope to accomplish, both as the chief scientist and for NOAA, in general, by the end

over the past four decades, it's been marked by an ever-increasing recognition of close linkages between disciplines that previously had been considered independently. I believe we can indeed find a set of unifying themes that will forge a better focus for NOAA, while not losing its

Who's Next?

Watch for an interview with Deputy Under Secretary Diana Josephson in next month's NOAA Report.

Increasing Numbers to Help Shape Modernization, Friday Says

First NWS Diversity Workshop Focuses on Women

Officials of NOAA's National Weather Service, looking to increase the number of women and minorities in mid- and upper-level positions, held the first of a series of workshops recently to focus on diversity in the workplace.

Some 200 NWS employees from across the country met in late September for the first workshop, which focused on issues inhibiting women from advancing into mid- and upper-level management positions. It was the first time in NWS history that its employees had gathered for such a purpose.

Based on August 1993 data, the total NWS full-time, permanent workforce of 5,094, 14 percent are female. Of the total NWS workforce at the GS/GM-13 level and above of 1,364, seven percent are female.

Remove Barriers to Advancement: Friday

NWS Assistant Administrator Joe Friday asked workshop participants to propose ways of increasing diversity in the workplace and removing the often subtle barriers that inhibit women from advancing. "The future success of the NWS in fulfilling its mission of saving lives and protecting property depends both on modern tools and talented people," Friday said. "We must encourage and assist all employees in achieving their potential, and ensure fairness."

Increasing the number of women and minorities in career paths leading to management and technical leadership positions is expected to help shape the Weather Service's 10-year modernization program, he added.

Analysis of Career Study

The workshop featured the results and analysis of the NWS-wide employee career development survey, speakers, panel discussions, and working group sessions focused on identifying changes needed in the NWS. Based on an overwhelming response of 71 percent to the survey, the NWS hopes to make changes to achieve the goal stated by assistant

administrator Friday.

Workshop participants dealt with concerns and challenges that affect

has taken place, a complainant must show that another's behavior is pervasive, severe, and has affected the complainant's working conditions. Silva said she sees her role as educating managers and employees about the nature of sexual harassment in an

"We must encourage and assist all employees in achieving their potential, and ensure fairness," said Joe Friday, NWS assistant administrator.

both men and women. Topics of discussion included shift work, family leave, child and elder care, training, and career development. Providing a male perspective for balance, 15 men actively participated in workshop activities.

DOC 'Serious' About Sexual Harassment

Frances C. Silva, a Commerce Department Office of General Counsel attorney, emphasized the Commerce Department's seriousness about stopping sexual harassment in the workplace, and said that, while the legal definition of sexual harassment is evolving, the basic problem has not changed. She explained that, in establishing that sexual harassment

effort to prevent it from occurring.

The workshop's co-chairs, Sylvia K. Graff, deputy meteorologist-in-charge at the Weather Service Forecast Office in Taunton, Mass., and Mary M. Glackin, chief of the Services Development Branch in the Office of Meteorology in Silver Spring, Md., expect to present workshop recommendations to NWS senior management in early 1994.

Future NWS diversity workshops will be targeted to African Americans, in March 1994; to Asian Americans and Native Americans/Alaska Natives, in April 1994; to Hispanic Americans, in late 1994; and to Persons with Disabilities, in early 1995.

—Janet Amber 

NOAA Administrator Dr. D. James Baker accepts a plaque welcoming NOAA to Silver Spring, Md., from Montgomery Cty. (Md.) County Executive Neil Potter, during dedication ceremonies for NOAA's Silver Spring campus in November.

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the Coast Guard. He was instructed to activate a 406 MHz Emergency Position Indicating Radio Beacon (EPIRB) to establish his position. Its signal was picked up by the COSPAS-SARSAT search and rescue system and relayed to the Coast Guard.

PA Staffer Named Top Army Journalist: A NWS public affairs officer has been selected by the Army as its 1993 Civilian Journalist of the Year. Barry Reichenbaugh was awarded the Keith L. Ware Civilian Print Journalist of the Year prize for outstanding news and feature writing when employed at the Walter Reed Army Medical Center, the Army's premier medical facility.

He worked at the Walter Reed Army

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Medical Center prior to joining NOAA Oct. 1. The Army selects the winner from more than 400 Army newspapers worldwide.

Halibut and Sablefish Under New System: In a major departure from conventional methods of managing fish stocks, NOAA has put in place a free-market forces management system of two valuable and highly competitive fisheries off Alaska that economists say could revolutionize how American fish stocks are managed.

Beginning in 1995, each commercial hook-and-line fisherman who qualifies will be given exclusive access to a share of the overall quota for Pacific halibut and sablefish in the Bering Sea and Aleutian Islands area and the Gulf of Alaska. These shares can be traded or sold under specified conditions and provide the basis for annually allocating individual catch limits for each species. The allocation is known as an individual fishing quota, or IFQ. ☺

Please Don't Feed the Dolphins: Judge

A federal appeals court in New Orleans has ruled that feeding wild dolphins could disturb their normal behavior and is thus illegal, overturning a Texas district court ruling last year that allowed such feeding.

The district court, acting in October 1992 in the case of a Corpus Christi, Tex., couple running a dolphin-feeding cruise boat operation in Corpus Christi Bay, issued an injunction against government no-feeding regulations. The regulations, in place since April 1991, were issued by NMFS.

The fisheries service argued that feeding wild dolphins disturbs their

normal behavior and may make them less able to search for food on their own.

Injunction Lifted

The Fifth Circuit Court of Appeals lifted the lower court's injunction Oct. 29, saying it was clearly reasonable for the fisheries service to prohibit the feedings as a potential hazard to the dolphins. Under the new ruling, it is again illegal to feed any wild marine mammals, which includes dolphin-feeding activities by commercial cruise-boat operators and recreational boaters.

Officials with NOAA's fisheries service said they would notify the estimated two dozen known dolphin-feeding operators of the ruling by the end of the week.

All known commercial operators work either along the Gulf of Mexico or off Hilton Head Island, S.C., and their season, which essentially runs from late spring through early fall, is just now winding down. Many of the operators run dolphin-watching cruises, an activity unaffected by the new court ruling. ☺

Wash. Sanctuary Passes Milestone

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pristine, rugged coastline and encompass 2,500 square nautical miles.

'Especially Significant': Sec. Brown

"The Olympic Coast sanctuary would be the 13th of its kind and is especially significant because the northern sea otter is among the 20 species of marine mammal whose survival it will help ensure," said Commerce Secretary Ronald H. Brown. "This animal was once hunted to near extinction, but has been reintroduced to the Olympic area from Alaska and some 300 of them are flourishing there."

California grey whales are also found in the area and an Olympic sanctuary would afford protection to them as well as to numerous species of fish and birds. ☺

Correction

The photograph of a satellite on page 8 of the October 1993 NOAA Report was of a GOES series satellite, not a Landsat.

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